

#### ABSTRACT OF THE DISCLOSURE

A multistage furnace for heating residential or commercial spaces is operated by a single stage thermostat and a return air temperature sensor providing sensed temperature information to a controller. The furnace is started at a first, low firing rate and after a predetermined time is increased to a second firing rate if the rate of change of temperature of air returning to the furnace from the space is less than a predetermined amount. The method of operation is carried further to increase the firing rate to second and third rates based on predetermined rates of temperature change of return air from the enclosed space as sensed by the return air sensor.

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